

# NASA Lewis IITA K-12 Program

## Objectives

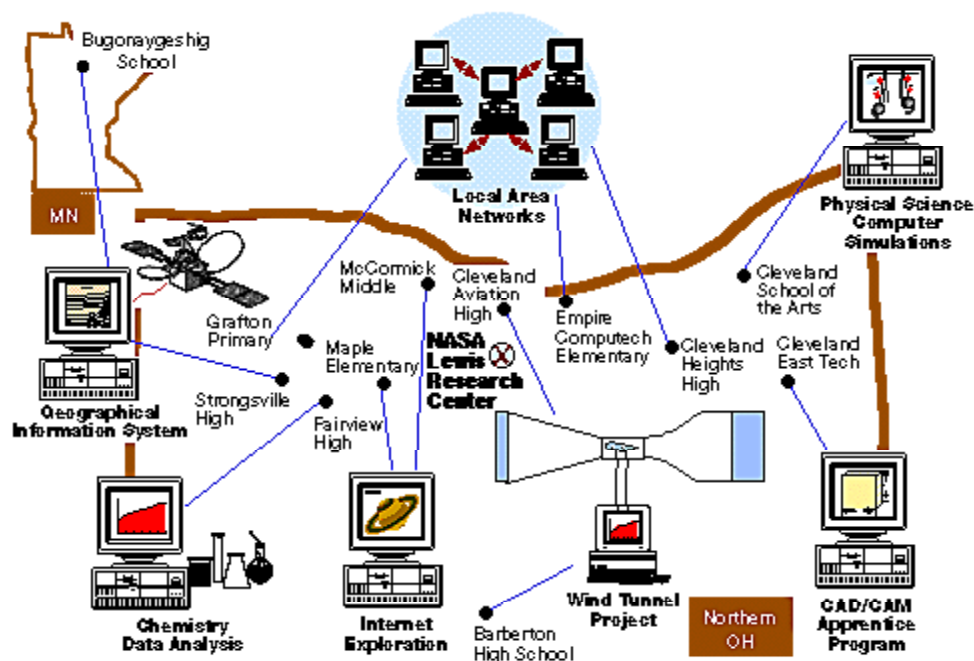
The NASA Lewis Research Center's Information Infrastructure Technology and Applications for Kindergarten to 12th Grade (IITA K-12) Program is designed to introduce into school systems computing and communications technology that benefits math and science studies. By incorporating this technology into K-12 curriculums, we hope to increase the proficiency and interest in math and science subjects by K-12 students so that they continue to study technical subjects after their high school careers are over.

## Approach

To accomplish this, we give K-12 teachers hands-on instruction on Macintosh software applications and Internet navigation. We offer formal 2-week training during the summer and other workshops throughout the school year.

Lewis' IITA K-12 Program includes research on the most cost-effective means to connect schools to the Internet. Radio frequency datalink and integrated services digital network (ISDN) technologies have been deployed in area schools as prototypes. Data such as reliability, capacity, and scalability of the technologies are being collected to determine the overall efficiency of the connections.

Thirteen schools have been identified as partner schools with Lewis' IITA K-12 Program. These schools have received Macintosh workstations, software, and network connections. In return, the teachers from these schools are developing instructional materials that use computer technology. This material will be disseminated to other K-12 schools.



## **Fiscal 1995 Accomplishments**

- A Classroom of Excellence equipped with eight Macintosh workstations was built at the NASA Lewis Visitors Center, the location for all the teacher training.
- Sixty people attended the K-12 Technology Forum. Speakers from Government agencies, educational institutions, and industry gave presentations on their technical K-12 programs.
- The IITA K-12 Summer Teacher Training was held from July 24 to August 4. Thirteen teachers from ten different schools were trained on Macintosh software applications and Internet access and navigation. In the summer, the K-12 program ran its first Student Summer Camp where students attended workshops on various computer-related topics and completed a project using the skills they had learned.
- Three schools were connected to the Internet via a radiofrequency datalink and three via an ISDN line.
- The Lewis IITA K-12 Program sponsors a wind tunnel project, where with teacher guidance, students construct a small-scale wind tunnel. Two schools are currently participating in this program--Barberton High School and General Benjamin O. Davis Jr. Aviation High School.

Lewis' IITA K-12 Program was a catalyst for many of the teachers who were in the program to implement technology into their schools and classrooms in various ways. Barberton High School now has a supercomputing class that was developed and implemented by the Barberton teacher in our program. Two schools have established local area networks within their schools; these were set up by teachers in our programs and paid for by matching funds. General Benjamin O. Davis Jr. Aviation High School is using the wind tunnel project to help them develop a new technology curriculum.

## **Future Plans**

The Classroom of Excellence will be opened in the Winter of 1996. There, teachers will be able to attend various computer-related workshops, preview new software and technologies, and develop classroom projects during open lab time.

Five area schools will participate in a networking collaboration. These schools will be identified as Internet hubs, and a teacher from each school will be trained as a system administrator.

This year, the wind tunnel project will focus on developing classroom projects and experiments that use the wind tunnel to demonstrate aerodynamic principles.